The purpose of this study was to determine the fluoride concentration of drinking water in Deregümü village, Isparta, Turkey, and to correlate the frequency, severity, and discoloration level of dental fluorosis and the perception of it by individuals. Water samples were taken from the drinking water tank of the village and from the groundwater source. Intraoral examination was made of 283 individuals (140 females, 143 males) between 12 and 80 years of age. The female and male individuals were divided into four age groups. The Thylstrup-Fejerskov Index (TFI) dental fluorosis scores and discoloration levels were recorded for each tooth, and individual perception was determined by a questionnaire. Twenty appropriate volunteers were selected for office and home bleaching treatments.

Statistical analysis was performed using the Kruskal-Wallis, Mann-Whitney, Bonferroni-Dunn, and Spearman rank correlation tests. The prevalence of dental fluorosis in this population was 94.1%, with TFI scores between 1 and 8. The mean level of fluoride in the drinking water was 1.83 mg/L. The mean TFI score was 3.58. Discoloration was severe (score of 3) in 25.08% of the individuals, moderate (score of 2) in 20.14%, and mild (score of 1) in 20.5%, whereas 34.28%
had no discoloration (score of 0). TFI and discoloration scores were positively correlated with age in both genders, whereas they were positively correlated with gender in some age groups (p<0.05). Young individuals and females had higher awareness than males and older individuals who requested bleaching therapy.

Satisfying results were achieved in bleaching discolorations. Because of the very high prevalence and relatively severe degree of dental fluorosis in the population of Deregümü, Isparta, Turkey, residents should be informed about preventive options and treatment alternatives.